National Institute of Environmental Health Sciences

Assessing the vulnerability of food crop systems in Africa to climate change

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Abstract:

Africa is thought to be the region most vulnerable to the impacts of climate variability and change. Agriculture plays a dominant role in supporting rural livelihoods and economic growth over most of Africa. Three aspects of the vulnerability of food crop systems to climate change in Africa are discussed: the assessment of the sensitivity of crops to variability in climate, the adaptive capacity of farmers, and the role of institutions in adapting to climate change. The magnitude of projected impacts of climate change on food crops in Africa varies widely among different studies. These differences arise from the variety of climate and crop models used, and the different techniques used to match the scale of climate model output to that needed by crop models. Most studies show a negative impact of climate change on crop productivity in Africa. Farmers have proved highly adaptable in the past to short- and long-term variations in climate and in their environment. Key to the ability of farmers to adapt to climate variability and change will be access to relevant knowledge and information. It is important that governments put in place institutional and macro-economic conditions that support and facilitate adaptation and resilience to climate change at local, national and transnational level.

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Resource Description

Climate Scenario :

specification of climate scenario (set of assumptions about future states related to climate)

Special Report on Emissions Scenarios (SRES), Other Climate Scenario

Special Report on Emissions Scenarios (SRES) Scenario: SRES A2, SRES B2

Other Climate Scenario: HadCM3

Communication:

resource focus on research or methods on how to communicate or frame issues on climate change; surveys of attitudes, knowledge, beliefs about climate change

A focus of content

Communication Audience:

audience to whom the resource is directed

Policymaker

Exposure :

weather or climate related pathway by which climate change affects health

Food/Water Security

Food/Water Security: Agricultural Productivity

Geographic Feature:

resource focuses on specific type of geography

Rural

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Africa

Health Co-Benefit/Co–Harm (Adaption/Mitigation):

specification of beneficial or harmful impacts to health resulting from efforts to reduce or cope with greenhouse gases

A focus of content

Health Impact:

specification of health effect or disease related to climate change exposure

Health Outcome Unspecified, Malnutrition/Undernutrition

Intervention:

strategy to prepare for or reduce the impact of climate change on health

A focus of content

Mitigation/Adaptation:

mitigation or adaptation strategy is a focus of resource

Adaptation

Model/Methodology:

type of model used or methodology development is a focus of resource

Exposure Change Prediction

Population of Concern: A focus of content

Population of Concern:

populations at particular risk or vulnerability to climate change impacts

Low Socioeconomic Status, Workers

Resource Type:

format or standard characteristic of resource

Review

Resilience:

capacity of an individual, community, or institution to dynamically and effectively respond or adapt to shifting climate impact circumstances while continuing to function

A focus of content

Timescale:

time period studied

Long-Term (>50 years)

Vulnerability/Impact Assessment:

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content